

UGC NET Paper 3 December 30, 2007 Shift 1 Environmental Sciences Question Paper

Signature and Name of Invigilator

Roll No.

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(In figures as per admission card)

1. (Signature) _____

(Name) _____

2. (Signature) _____

(Name) _____

Roll No. _____

(In words)

Test Booklet No.

D-8907**PAPER-III****Time : 2½ hours] ENVIRONMENTAL SCIENCE [Maximum Marks : 200**

Number of Pages in this Booklet : 32

Number of Questions in this Booklet : 26

Instructions for the Candidates

- Write your roll number in the space provided on the top of this page.
- Answers to short answer/essay type questions are to be given in the space provided below each question or after the questions in the Test Booklet itself.

No Additional Sheets are to be used.

- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :

(i) To have access to the Test Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal and do not accept an open booklet.

(ii) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the question booklet will be replaced nor any extra time will be given.

- Read instructions given inside carefully.
- One page is attached for Rough Work at the end of the booklet before the Evaluation Sheet.
- If you write your name or put any mark on any part of the Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
- You have to return the Test booklet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall.
- Use only Blue/Black Ball point pen.
- Use of any calculator or log table etc. is prohibited.
- There is NO negative marking.

परीक्षार्थियों के लिए निर्देश

- पहले पृष्ठ के ऊपर नियत स्थान पर अपना रोल नम्बर लिखिए।
- लघु प्रश्न तथा निबंध प्रकार के प्रश्नों के उत्तर, प्रत्येक प्रश्न के नीचे या प्रश्नों के बाद में दिये हुये रिक्त स्थान पर ही लिखिये।

इसके लिए कोई अतिरिक्त कागज का उपयोग नहीं करना है।

- परीक्षा प्रारम्भ होने पर, प्रश्न-पुस्तिका आपको दे दी जायेगी। पहले पाँच मिनट आपको प्रश्न-पुस्तिका खोलने तथा उसकी निम्नलिखित जाँच के लिए दिये जायेंगे जिसकी जाँच आपको अवश्य करनी है :

(i) प्रश्न-पुस्तिका खोलने के लिए उसके कवर पेज पर लगी सील को फाड़ लें। खुली हुई या बिना स्टीकर-सील की पुस्तिका स्वीकार न करें।

(ii) कवर पृष्ठ पर छपे निर्देशानुसार प्रश्न-पुस्तिका के पृष्ठ तथा प्रश्नों की संख्या को अच्छी तरह चैक कर लें कि ये पूरे हैं। दोषपूर्ण पुस्तिका जिनमें पृष्ठ/प्रश्न कम हों या दुबारा आ गये हों या सीरियल में न हों अर्थात् किसी भी प्रकार की त्रुटिपूर्ण पुस्तिका स्वीकार न करें तथा उसी समय उसे लौटाकर उसके स्थान पर दूसरी सही प्रश्न-पुस्तिका ले ले। इसके लिए आपको पाँच मिनट दिये जायेंगे। उसके बाद न तो आपकी प्रश्न-पुस्तिका वापस ली जायेगी और न ही आपको अतिरिक्त समय दिया जायेगा।

- अन्दर दिये गये निर्देशों को ध्यानपूर्वक पढ़ें।
- उत्तर-पुस्तिका के अन्त में कच्चा काम (Rough Work) करने के लिए मूल्यांकन शीट से पहले एक पृष्ठ दिया हुआ है।
- यदि आप उत्तर-पुस्तिका पर अपना नाम या ऐसा कोई भी निशान जिससे आपकी पहचान हो सके, किसी भी भाग पर दर्शाते या अंकित करते हैं तो परीक्षा के लिये अयोग्य घोषित कर दिये जायेंगे।
- आपको परीक्षा समाप्त होने पर उत्तर-पुस्तिका निरीक्षक महोदय को लौटाना आवश्यक है और इसे परीक्षा समाप्ति के बाद अपने साथ परीक्षा भवन से बाहर न लेकर जायें।
- केवल नीले / काले बाल प्वाइंट पेन का ही इस्तेमाल करें।
- किसी भी प्रकार का संगणक (कैलकुलेटर) या लाग टेबल आदि का प्रयोग वर्जित है।
- गलत उत्तर के लिए अंक नहीं काटे जायेंगे।

ENVIRONMENTAL SCIENCE

PAPER – III

NOTE: This paper is of two hundred (200) marks containing four (4) sections. Candidates are required to attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION - I

Note : This section contains five (5) questions based on the following paragraph. Each question should be answered in about thirty (30) words and each carries five (5) marks.

(5x5=25 marks)

Tropical forests alongwith rangelands and wilderness are key biological resources subjected to increasing stress due to population growth and economic development. Potentially forests cover about 34% of the earth's land surface, but in the last four decades about half of the world's forests have been destroyed to provide for croplands, rangelands, dam reservoirs and urban lands. World-wide tropical forests are disappearing faster than any other terrestrial ecosystem.

Forests supply us wood for housing, biomass for fuel wood, pulp for paper, medicines and many other products. The society receives many benefits, called ecosystem services, from natural and managed forest ecosystems which perform several vital ecological functions. Forested watersheds act as giant sponges, absorbing, holding and gradually releasing water that recharges springs, streams and aquifers. Forests help control soil erosion and build soil fertility and reduce severity of flooding and silting.

Forests also play an important role in the global carbon cycle, acting as defense against global warming. Through photosynthesis trees help remove carbon dioxide from and add oxygen to the air. That is why the lush tropical forests have been called "the lungs of the earth".

Forests provide habitats for a large number of wild life species, making themselves the planet's reservoir of biological diversity. Forests also help buffer noise, absorb some pollutants and nourish human spirit by providing solitude and beauty.

The ecological benefits of forests have rarely been quantified in economic terms. For instance, it is estimated that a typical tree may provide Rs. 80 lakhs worth of ecosystem services. Sold as timber the same tree may not be worth more than Rs. 25000.

The tropical forests should be considered as non-renewable resource in human time scale. Conservation of these vital resources from degradation, using them sustainably and restoring those we have degraded are our most important challenges today.

1. The author is primarily concerned with :
- (A) Describing reduction in forest cover
 - (B) Listing uses of forests
 - (C) Emphasizing economic value of forests
 - (D) Emphasizing the ecological significance of forests
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2. Tropical forest area is getting reduced mainly due to :
- (A) Global climate change
 - (B) Increasing population pressure and economic development
 - (C) Requirement of wood
 - (D) Making water reservoirs
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3. Which of the following benefits pertain to unseen ecosystem services derived from forests ?
- (A) Supply of timber
 - (B) Supply of raw materials for medicines
 - (C) Supply of fuel wood
 - (D) Supply of potable water

4. The material in passage could be best used as an argument :
- (A) To promote forest studies
 - (B) To emphasize conservation of tropical forests
 - (C) To evaluate the economic value of forests
 - (D) To promote ecotourism

5. What is the most critical environmental issue associated with tropical forests within the present day human time scale ?
- (A) Rapid destruction
 - (B) Non-renewable nature
 - (C) Excessive extraction of timber
 - (D) Lack of conservation measures

SECTION - II

Note : This section contains fifteen (15) questions each to be answered in about thirty (30) words. Each question carries five (5) marks.

(5×15=75 marks)

6. Bioinoculants.

Blank lined paper for writing.

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9. Extremophile.

10. Inversion layer.

11. Environmental audit.

12. $\text{PM}_{2.5}$

13. Dobson Unit.

14. F-statistics.

15. Opitcal density.

16. COD.

17. Acid rain.

18. Keystone species.

19. Food chains.

20. Ecological niche.

SECTION - III

Note : This section contains five (5) questions. Each question carries twelve (12) marks and is to be answered in about two hundred (200) words.
(12x5=60 marks)

21. Use of GIS in Environmental Management.
22. Marine Pollution in India.
23. Significance of Nutrient Cycling in Ecosystems.
24. Bioenergy Potential in India.
25. Microbial Degradation of Cellulose.

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SECTION - IV

Note : This section consists of one essay type question of forty (40) marks to be answered in about one thousand (1000) words on any of the following topics.

(40x1=40 marks)

26. Write on any one of the following :

- (a) What is Bioremediation ? Comment on bioremediation of soils contaminated with oil spills.

OR

- (b) Enumerate advantages and disadvantages of Genetically Modified Organism (GMOS) and their environmental concerns.

OR

- (c) Significance and approaches of biodiversity conservation.

OR

- (d) Outline the general principles of analytical methods of water quality assessment.

OR

- (e) Environmental impacts of open cast coal mining.

OR

- (f) Environmental problems associated with mega-thermal power plants and remedial measures.

OR

- (g) Approaches to restoration and rehabilitation of degraded ecosystems.

OR

- (h) Current environmental issues in India.

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Marks Obtained							
Question Number	Marks Obtained	Question Number	Marks Obtained	Question Number	Marks Obtained	Question Number	Marks Obtained
1		26		51		76	
2		27		52		77	
3		28		53		78	
4		29		54		79	
5		30		55		80	
6		31		56		81	
7		32		57		82	
8		33		58		83	
9		34		59		84	
10		35		60		85	
11		36		61		86	
12		37		62		87	
13		38		63		88	
14		39		64		89	
15		40		65		90	
16		41		66		91	
17		42		67		92	
18		43		68		93	
19		44		69		94	
20		45		70		95	
21		46		71		96	
22		47		72		97	
23		48		73		98	
24		49		74		99	
25		50		75		100	

Total Marks Obtained (in words)

(in figures)

Signature & Name of the Coordinator

(Evaluation) Date